REVISIONS

LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
C	Convert to military drawing format. Device 01FX inactive for new design. Add I_{OH} and I_{OL} to table I and delete minimum limits for t_r. Editorial changes throughout.	86-06-06	Monica Poelking
D	Add device type 02 and vendor CAGE 34371. Delete vendor CAGE 31019. Changes to 1.3, 1.4, table I, and table II. Change in military drawing format. Change drawing CAGE code to 67268. Editorial changes throughout.	90-06-26	Monica Poelking
E	Technical changes in 1.4 and table I. Editorial changes throughout.	92-04-07	M. A. Fyre

REV																				
SHEET																				
REV	E	E																		
SHEET	15	16																		

REV STATUS OF SHEETS	REV	E	E	E	E	E	E	E	E	E	E	E	E	E
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

PMIC N/A

STANDARDIZED MILITARY DRAWING

THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

AMSC N/A

PREPARED BY
Marcia B. Kelleher

CHECKED BY
Thomas J. Ricciuti

APPROVED BY
Monica L. Poelking

DRAWING APPROVAL DATE
81-07-01

REVISION LEVEL E

DEFENSE ELECTRONICS SUPPLY CENTER
DAYTON, OHIO 45444

MICROCIRCUIT, DIGITAL, CMOS, PRESETTABLE, BINARY/DECADE UP/DOWN COUNTER, MONOLITHIC SILICON

SIZE	CAGE CODE	
A	**67268**	**81016**

SHEET 1 OF 16

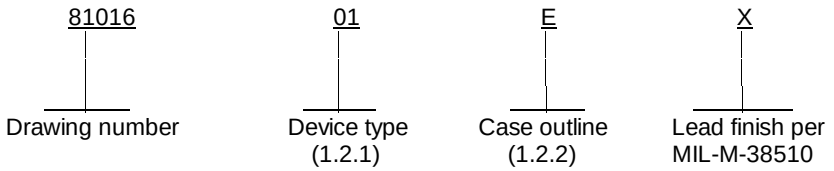
DESC FORM 193
JUL 91

5962-E306

1. SCOPE

1.1 Scope. This drawing describes device requirements for class B microcircuits in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices."

1.2 Part or Identifying Number (PIN). The complete PIN shall be as shown in the following example:



1.2.1 Device type(s). The device type(s) shall identify the circuit function as follows:

Device type	Generic number	Circuit
01	4029B	Presettable binary/decade up/down counter
02	4029B	Presettable binary/decade up/down counter

1.2.2 Case outline(s). The case outline(s) shall be as designated in appendix C of MIL-M-38510, and as follows:

Outline letter	Case outline
E	D-2 (16-lead, .840" x .310" x .200"), dual-in-line package
F	F-5 (16-lead, .440" x .285" x .085"), flat package

1.3 Absolute maximum ratings.

Supply voltage range (V_{DD}), device type 01	-0.5 V dc to +18 V dc
Supply voltage range (V_{DD}), device type 02	-0.5 V dc to +20 V dc
Input voltage range	-0.5 V dc to V_{DD} + 0.5 V dc
DC input current	±10 mA
Storage temperature range	-65°C to +150°C
Maximum power dissipation (P_D) 1/	500 mW dc
Lead temperature (soldering, 10 seconds)	+300°C
Thermal resistance, junction-to-case (θ_{JC})	See MIL-M-38510, appendix C
Junction temperature (T_J)	+175°C

1.4 Recommended operating conditions.

Supply voltage range (V_{DD}), device type 01	+3.0 V dc to +15 V dc
Supply voltage range (V_{DD}), device type 02	+3.0 V dc to +18 V dc
Case operating temperature range (T_C)	-55°C to +125°C
Input rise or fall times (t_r, t_f):	
T_C = +25°C, V_{DD} = 5 V dc	15.0 µs
T_C = -55°C, +125°C, V_{DD} = 5 V dc	15.0 µs
T_C = +25°C, V_{DD} = 10 V dc	10.0 µs
T_C = -55°C, +125°C, V_{DD} = 10 V dc	15.0 µs
T_C = +25°C, V_{DD} = 15 V dc	5.0 µs
T_C = -55°C, +125°C, V_{DD} = 15 V dc	15.0 µs

1/ For T_C = +100°C to +125°C, derate linearly at 12 mW/°C to 200 mW.

Minimum setup time, $\overline{\text{CARRY IN}}$ (t_{s1}):
- Device type 01, T_C = +25° C, V_{DD} = 5 V dc . . . . . 360 ns
- Device type 02, T_C = +25° C, V_{DD} = 5 V dc . . . . . 200 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 5 V dc . . . . 300 ns
- Device type 02, T_C = +25° C, V_{DD} = 10 V dc . . . . . 70 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 10 V dc . . . . 105 ns
- Device type 02, T_C = +25° C, V_{DD} = 15 V dc . . . . . 60 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 15 V dc . . . . 90 ns

Minimum CLOCK pulse width (t_{w1}):
- Device type 01, T_C = +25° C, V_{DD} = 5 V dc . . . . . 250 ns
- Device type 01, T_C = -55° C, +125° C, V_{DD} = 5 V dc . . . . . 350 ns
- Device type 02, T_C = +25° C, V_{DD} = 5 V dc . . . . . 180 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 5 V dc . . . . . 270 ns
- Device type 02, T_C = +25° C, V_{DD} = 10 V dc . . . . . 90 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 10 V dc . . . . . 135 ns
- Device type 02, T_C = +25° C, V_{DD} = 15 V dc . . . . . 60 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 15 V dc . . . . 90 ns

Minimum PRESET ENABLE pulse width (t_{w2}):
- Device type 01, T_C = +25° C, V_{DD} = 5 V dc . . . . . 250 ns
- Device type 01, T_C = -55° C, +125° C, V_{DD} = 5 V dc . . . . . 375 ns
- Device type 02, T_C = +25° C, V_{DD} = 5 V dc . . . . . 130 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 5 V dc . . . . . 195 ns
- Device type 02, T_C = +25° C, V_{DD} = 10 V dc . . . . . 70 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 10 V dc . . . . 105 ns
- Device type 02, T_C = +25° C, V_{DD} = 15 V dc . . . . . 50 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 15 V dc . . . . . 75 ns

Minimum setup time, B/$\overline{\text{D}}$ or U/$\overline{\text{D}}$ (t_{s2}):
- Device type 01, T_C = +25° C, V_{DD} = 5 V dc . . . . . 360 ns
- Device type 02, T_C = +25° C, V_{DD} = 5 V dc . . . . . 340 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 5 V dc . . . . . 510 ns
- Device type 02, T_C = +25° C, V_{DD} = 10 V dc . . . . . 140 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 10 V dc . . . . . 210 ns
- Device type 02, T_C = +25° C, V_{DD} = 15 V dc . . . . . 100 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 15 V dc . . . . . 150 ns

Minimum hold time, $\overline{\text{CARRY IN}}$ (t_h):
- Device type 02, T_C = +25° C, V_{DD} = 5 V dc . . . . . 50 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 5 V dc . . . . . 75 ns
- Device type 02, T_C = +25° C, V_{DD} = 10 V dc . . . . . 35 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 10 V dc . . . . 52 ns
- Device type 02, T_C = +25° C, V_{DD} = 15 V dc . . . . . 25 ns
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 15 V dc . . . . 38 ns

Maximum input CLOCK frequency (f_{MAX}):
- Device type 01, T_C = +25° C, V_{DD} = 5 V dc . . . . . 1.5 MHz minimum
- Device type 01, T_C = -55° C, +125° C, V_{DD} = 5 V dc . . . . . 2.0 MHz minimum
- Device type 02, T_C = +25° C, V_{DD} = 5 V dc . . . . . 2.0 MHz minimum
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 5 V dc . . . . . 1.15 MHz minimum
- Device type 02, T_C = +25° C, V_{DD} = 10 V dc . . . . . 4.0 MHz minimum
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 10 V dc . . . . . 2.6 MHz minimum
- Device type 02, T_C = +25° C, V_{DD} = 15 V dc . . . . . 5.5 MHz minimum
- Device type 02, T_C = -55° C, +125° C, V_{DD} = 15 V dc . . . . 3.6 MHz minimum

Minimum PRESET ENABLE removal time (t_{rem}):
Device type 01, T_C = +25°C, V_{DD} = 5 V dc . . . . . 450 ns
Device type 01, T_C = -55°C, +125°C, V_{DD} = 5 V dc . . . . . 700 ns
Device type 02, T_C = +25°C, V_{DD} = 5 V dc . . . . . 200 ns
Device type 02, T_C = -55°C, +125°C, V_{DD} = 5 V dc . . . . . 300 ns
Device type 02, T_C = +25°C, V_{DD} = 10 V dc . . . . . 110 ns
Device type 02, T_C = -55°C, +125°C, V_{DD} = 10 V dc . . . . 165 ns
Device type 02, T_C = +25°C, V_{DD} = 15 V dc . . . . . 80 ns
Device type 02, T_C = -55°C, +125°C, V_{DD} = 15 V dc . . . . . 120 ns

2. APPLICABLE DOCUMENTS

2.1 Government specification, standard, and bulletin. Unless otherwise specified, the following specification, standard, and bulletin of the issue listed in that issue of the Department of Defense Index of Specifications and Standards specified in the solicitation, form a part of this drawing to the extent specified herein.

SPECIFICATION

MILITARY

MIL-M-38510 - Microcircuits, General Specification for.

STANDARD

MILITARY

MIL-STD-883 - Test Methods and Procedures for Microelectronics.

BULLETIN

MILITARY

MIL-BUL-103 - List of Standardized Military Drawings (SMD's).

(Copies of the specification, standard, and bulletin required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing shall take precedence.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with 1.2.1 of MIL-STD-883, "Provisions for the use of MIL-STD-883 in conjunction with compliant non-JAN devices" and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510 and herein.

3.2.1 Terminal connections. The terminal connections shall be as specified on figure 1.

3.2.2 Truth table. The truth table shall be as specified on figure 2.

3.2.3 Logic diagram. The logic diagram shall be as specified on figure 3.

3.2.4 Timing diagrams. The timing diagrams shall be as specified on figure 4.

3.2.5 Case outline(s). The case outline(s) shall be in accordance with 1.2.2 herein.

3.3 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and shall apply over the full case operating temperature range.

3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table I.

3.5 Marking. Marking shall be in accordance with MIL-STD-883 (see 3.1 herein). The part shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's PIN may also be marked as listed in MIL-BUL-103 (see 6.6 herein).

3.6 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in MIL-BUL-103 (see 6.6 herein). The certificate of compliance submitted to DESC-ECS prior to listing as an approved source of supply shall affirm that the manufacturer's product meets the requirements of MIL-STD-883 (see 3.1 herein) and the requirements herein.

3.7 Certificate of conformance. A certificate of conformance as required in MIL-STD-883 (see 3.1 herein) shall be provided with each lot of microcircuits delivered to this drawing.

3.8 Notification of change. Notification of change to DESC-ECS shall be required in accordance with MIL-STD-883 (see 3.1 herein).

3.9 Verification and review. DESC, DESC's agent, and the acquiring activity retain the option to review the manufacturer's facility and applicable required documentation. Offshore documentation shall be made available onshore at the option of the reviewer.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with section 4 of MIL-M-38510 to the extent specified in MIL-STD-883 (see 3.1 herein).

4.2 Screening. Screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to quality conformance inspection. The following additional criteria shall apply:

a. Burn-in test, method 1015 of MIL-STD-883.

   (1) Test condition A, B, C, or D using the circuit submitted with the certificate of compliance (see 3.6 herein).

   (2) T_A = +125°C, minimum.

b. Interim and final electrical test parameters shall be as specified in table II herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55°C \le T_A \le +125°C$ unless otherwise specified		Device type	Group A subgroups	Limits		Unit
						Min	Max	
Quiescent supply current	I_{DD}	V_{DD} = 5 V, 1/ V_{IN} = 0.0 V or V_{DD}		All	1, 3		5	µA
					2		150	
		V_{DD} = 10 V, 2/ V_{IN} = 0.0 V or V_{DD}		02	1, 3		10	
					2		300	
		V_{DD} = 15 V, 1/ V_{IN} = 0.0 V or V_{DD}		All	1, 3		20	
					2		600	
		V_{DD} = 20 V, 3/ V_{IN} = 0.0 V or V_{DD}		02	1, 3		100	
					2		3000	
Low level output voltage	V_{OL}	V_{IN} = 0.0 V or V_{DD}, $\lvert I_O \rvert$ < 1 µA	V_{DD} = 5 V 2/	All	1, 2, 3		0.05	V
			V_{DD} = 10 V 2/	02	1, 2, 3		0.05	
			V_{DD} = 15 V	All	1, 2, 3		0.05	
High level output voltage	V_{OH}	V_{IN} = 0.0 V or V_{DD}, $\lvert I_O \rvert$ < 1 µA	V_{DD} = 5 V 2/	All	1, 2, 3	4.95		V
			V_{DD} = 10 V 2/	02	1, 2, 3	9.95		
			V_{DD} = 15 V	All	1, 2, 3	14.95		
Low level input voltage	V_{IL}	V_{DD} = 5 V, V_O = 0.5 V or 4.5 V		All	1, 2, 3		1.5	V
		V_{DD} = 10 V, V_O = 1.0 V or 9.0 V 2/		02	1, 2, 3		3.0	
		V_{DD} = 15 V, V_O = 1.5 V or 13.5 V		All	1, 2, 3		4.0	

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions $-55°C \le T_C \le +125°C$ unless otherwise specified		Device type	Group A subgroups	Limits Min	Limits Max	Unit
High level input voltage	V_{IH}	V_{DD} = 5 V, V_O = 0.5 V or 4.5 V		All	1, 2, 3	3.5		V
		V_{DD} = 10 V, 2/ V_O = 1.0 V or 9.0 V		02	1, 2, 3	7.0		
		V_{DD} = 15 V, V_O = 1.5 V or 13.5 V		All	1, 2, 3	11.0		
Input current	I_{IN}	V_{DD} = 15 V, V_{IN} = 0.0 V or V_{DD}		01	1, 3 2		±0.1 ±1.0	µA
		V_{DD} = 20 V, 3/ V_{IN} = 0.0 V or V_{DD}		02	1, 3 2		±0.1 ±1.0	
Input capacitance	C_{IN}	V_{IN} = 0 V, T_C = +25°C, See 4.3.1c		All	4		7.5	pF
Functional test		See 4.3.1.d		All	7, 8			
Propagation delay time, CLOCK to Qn	t_{PHL1}, t_{PLH1}	R_L = 200 kΩ, C_L = 50 pF minimum, $t_r = t_f$ = 20 ns See figure 5 4/	V_{DD} = 5 V	01	9 10, 11	20 30	450 650	ns
				02	9 10, 11	1.5 1.5	500 750	
			V_{DD} = 10 V 2/	02	9 10, 11	1.5 1.5	240 360	
			V_{DD} = 15 V 2/	02	9 10, 11	1.5 1.5	180 270	

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions $-55°C \le T_C \le +125°C$ unless otherwise specified		Device type	Group A subgroups	Limits Min	Limits Max	Unit
Propagation delay time, CLOCK to CARRY OUT	t_{PHL2}, t_{PLH2}	R_L = 200 kΩ C_L = 50 pF minimum, $t_r = t_f$ = 20 ns See figure 5 4/	V_{DD} = 5 V	01	9 10, 11	32 48	640 960	ns
				02	9 10, 11	1.5 1.5	560 840	
			V_{DD} = 10 V 2/	02	9 10, 11	1.5 1.5	260 390	
			V_{DD} = 15 V 2/	02	9 10, 11	1.5 1.5	190 285	
Propagation delay time, PRESET ENABLE to Qn	t_{PHL3}, t_{PLH3}		V_{DD} = 5 V	01	9 10,11	24 36	500 750	ns
				02	9 10, 11	1.5 1.5	470 705	
			V_{DD} = 10 V 2/	02	9 10, 11	1.5 1.5	200 300	
			V_{DD} = 15 V 2/	02	9 10, 11	1.5 1.5	160 240	
Propagation delay time, PRESET ENABLE to CARRY OUT	t_{PHL4}, t_{PLH4}		V_{DD} = 5 V	01	9 10, 11	40 50	800 1200	ns
				02	9 10, 11	1.5 1.5	640 960	
			V_{DD} = 10 V 2/	02	9 10, 11	1.5 1.5	290 435	
			V_{DD} = 15 V 2/	02	9 10, 11	1.5 1.5	210 305	
Propagation delay time, CARRY IN to CARRY OUT	t_{PHL5}, t_{PLH5}		V_{DD} = 5 V	02	9 10, 11	1.5 1.5	340 510	
			V_{DD} = 10 V 2/	02	9 10, 11	1.5 1.5	140 210	
			V_{DD} = 15 V 2/	02	9 10, 11	1.5 1.5	100 150	
Output transition time, Qn or CARRY OUT	t_{THL}, t_{TLH}		V_{DD} = 5 V	01	9 10, 11	10 15	225 325	
				02	9 10, 11	1.5 1.5	200 300	
			V_{DD} = 10 V 2/	02	9 10, 11	1.5 1.5	100 150	
			V_{DD} = 15 V 2/	02	9 10, 11	1.5 1.5	80 120	

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions $-55°C \le T_C \le +125°C$ unless otherwise specified	Device type	Group A subgroup	Limits		Unit
					Min	Max	
Low level output current	I_{OL}	V_{DD} = 5 V V_O = 0.4 V V_{IN} = 0.0 V or V_{DD}	All	1	0.51		mA
				2 1/	0.36		
				3 1/	0.64		
		V_{DD} = 10 V 2/ V_O = 0.5 V V_{IN} = 0.0 V or V_{DD}	02	1	1.3		
				2	0.9		
				3	1.6		
		V_{DD} = 15 V 2/ V_O = 1.5 V V_{IN} = 0.0 V or V_{DD}	All	1	3.4		
				2	2.4		
				3	4.2		
High level output current	I_{OH}	V_{DD} = 5 V V_O = 4.6 V V_{IN} = 0.0 V or V_{DD}	All	1	-0.2		mA
				2	-0.14		
				3	-0.25		
		V_{DD} = 5 V V_O = 2.5 V V_{IN} = 0.0 V or V_{DD}	02	1	-1.6		
				2 2/	-1.15		
				3 2/	-2.0		
		V_{DD} = 10 V 2/ V_O = 9.5 V V_{IN} = 0.0 V or V_{DD}	02	1	-1.3		
				2	-0.9		
				3	-1.6		
		V_{DD} = 15 V 2/ V_O = 13.5 V V_{IN} = 0.0 V or V_{DD}	All	1	-1.5		
				2	-1.1		
				3	-1.8		

1/ Guaranteed, if not tested, to the specified limits for device type 02.
2/ Guaranteed, if not tested, to the specified limits.
3/ This test is performed at -55° C with V_{DD} = 18 V.
4/ Propagation delay tests are performed on a one-input to one-output basis only for device type 02.

4.3 Quality conformance inspection. Quality conformance inspection shall be in accordance with method 5005 of MIL-STD-883, including groups A, B, C, and D inspections. The following additional criteria shall apply.

4.3.1 Group A inspection.

a. Tests shall be as specified in table II herein.

b. Subgroups 5 and 6 in table I, method 5005 of MIL-STD-883 shall be omitted.

c. Subgroup 4 (C_{IN} measurement) shall be measured only for the initial test and after process or design changes which may affect capacitance. Capacitance shall be measured between the designated terminal and GND at a frequency of 1 MHz. Test all applicable pins on five devices with zero failures.

d. Subgroup 7 and 8 tests shall include verification of the truth table.

4.3.2 Groups C and D inspections.

a. End-point electrical parameters shall be as specified in table II herein.

b. Steady-state life test conditions, method 1005 of MIL-STD-883.

(1) Test condition A, B, C, or D using the circuit submitted with the certificate of compliance (see 3.6 herein).

(2) T_A = +125°C, minimum.

(3) Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-38510.

6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for OEM application. When a military specification exists and the product covered by this drawing has been qualified for listing on QPL-38510, the device specified herein will be inactivated and will not be used for new design. The QPL-38510 product shall be the preferred item for all applications.

6.2 Replaceability. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. The coordination will be accomplished in accordance with MIL-STD-481 using DD Form 1693, Engineering Change Proposal (Short Form).

Device types	01 and 02
Case outlines	E and F
Terminal number	Terminal symbol
1	PRESET ENABLE
2	Q4
3	JAM 4
4	JAM 1
5	CARRY IN
6	Q1
7	CARRY OUT
8	V_{SS}
9	BINARY/DECADE
10	UP/DOWN
11	Q2
12	JAM 2
13	JAM 3
14	Q3
15	CLOCK
16	V_{DD}

FIGURE 1. Terminal connections.

Device types 01 and 02

CARRY IN	UP/DOWN	PRESET ENABLE	BINARY/DECADE	ACTION
H	X	L	X	No change
L	H	L	L	Count up (DECADE)
L	H	L	H	Count up (BINARY)
L	L	L	L	Count down(DECADE)
L	L	L	H	Count down(BINARY)
X	X	H	X	PRESET

H = High voltage level
L = Low voltage level
X = Irrelevant

FIGURE 2. Truth table.

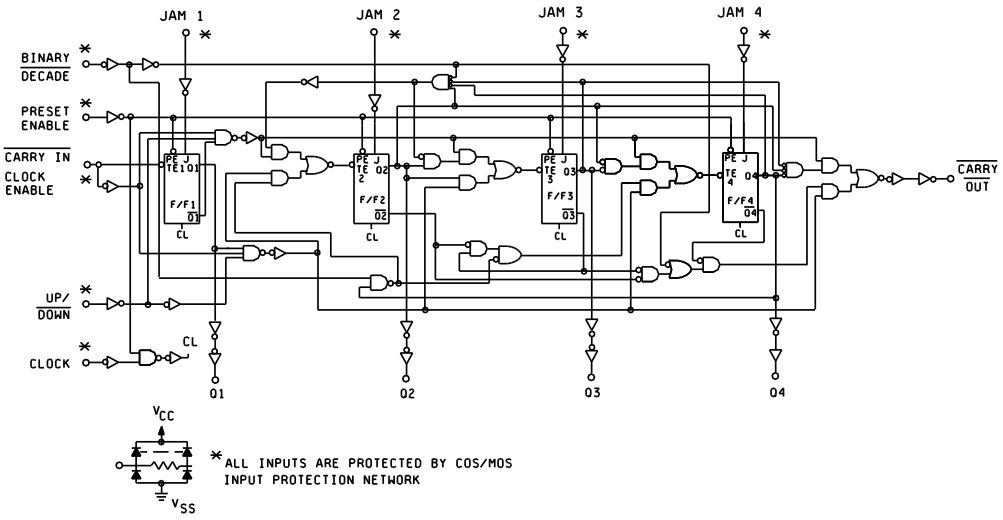


FIGURE 3. Logic diagram.

Timing diagram-binary mode

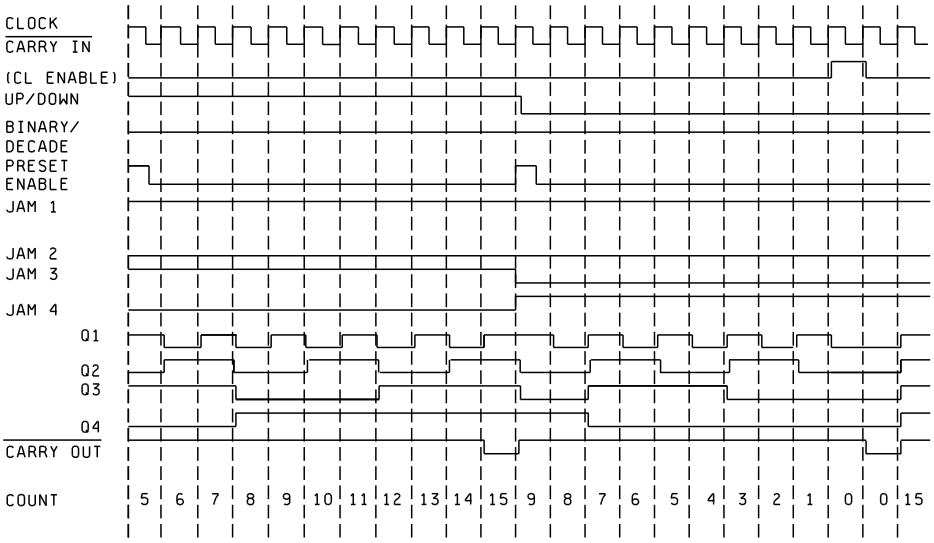


FIGURE 4. Timing diagrams.

Timing diagram-decade mode

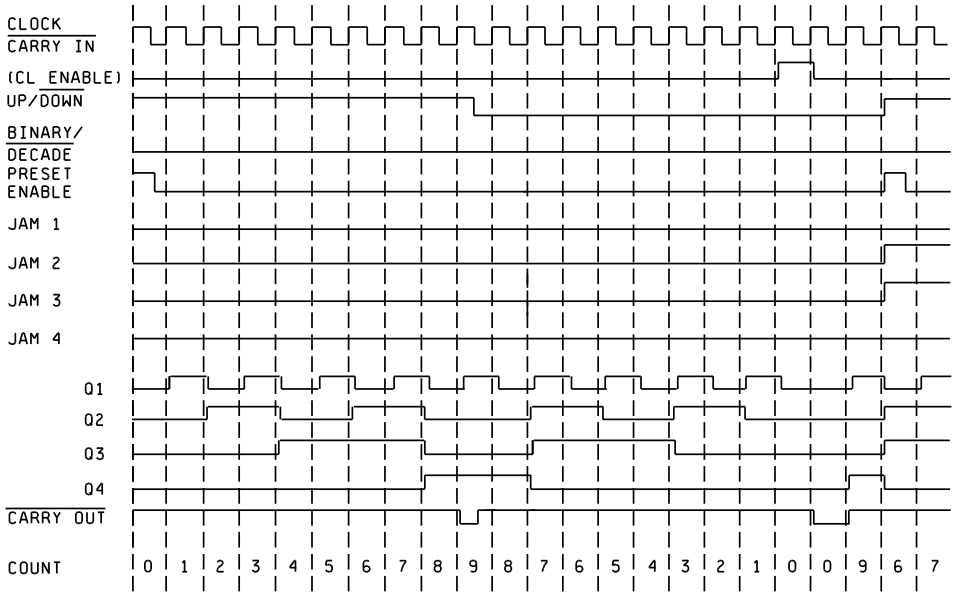


FIGURE 4. Timing diagrams - Continued.

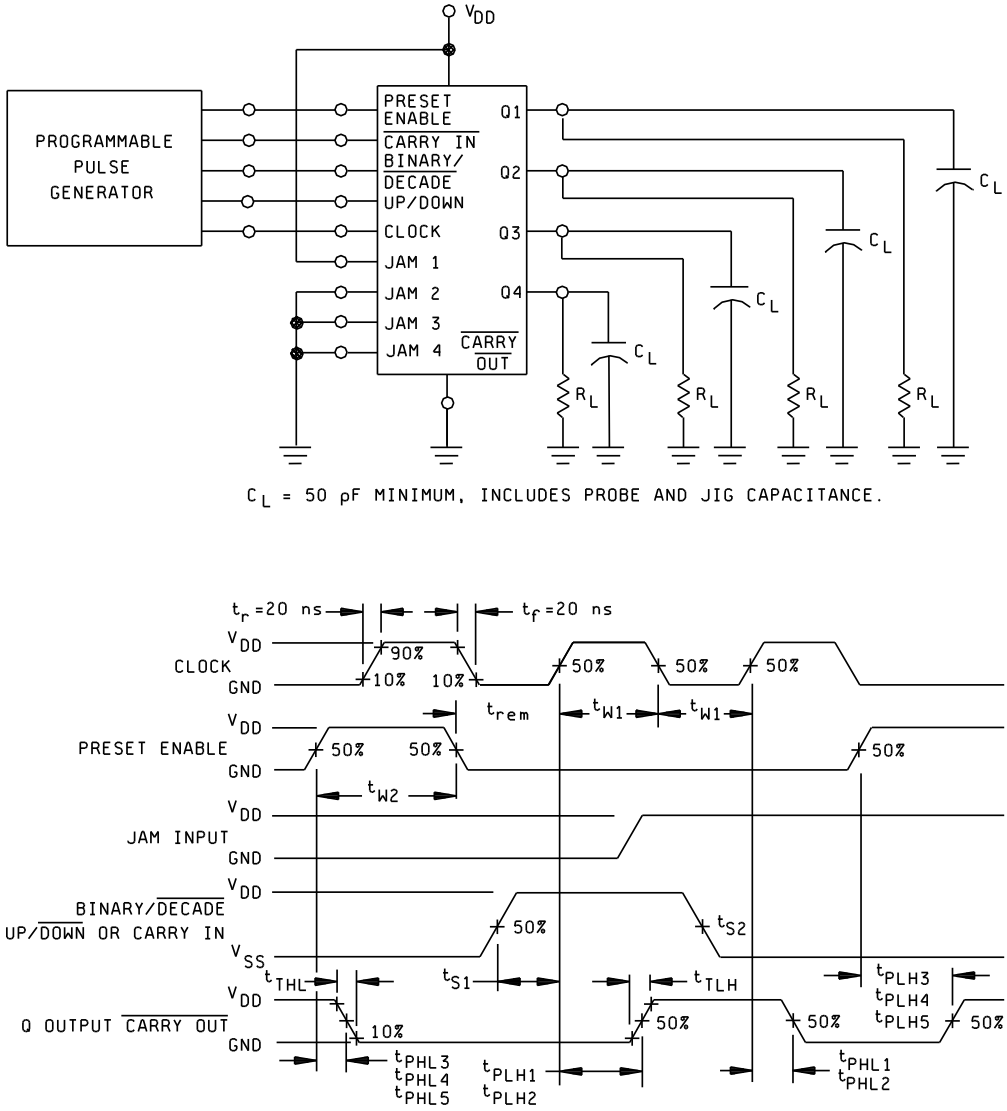


FIGURE 5. Test circuit and switching waveforms.

STANDARDIZED MICROCIRCUIT DRAWING DEFENSE ELECTRONIC SUPPLY CENTER DAYTON, OHIO 45444	SIZE **A**		**81016**
		REVISION LEVEL F	SHEET **15**

TABLE II. Electrical test requirements.

MIL-STD-883 test requirements	Subgroups (per method 5005, table I)
Interim electrical parameters (method 5004)	---
Final electrical test parameters (method 5004)	1*,2,3,7,9
Group A test requirements (method 5005)	1,2,3,4,7,8, 9, 10**,11**
Groups C and D end-point electrical parameters (method 5005)	1,2,3

* PDA applies to subgroup 1.
** Subgroups 10 and 11, if not tested, shall be guaranteed to the specified limits in table I.

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. The coordination will be accomplished in accordance with MIL-STD-481 using DD Form 1693, Engineering Change Proposal (Short Form).

6.4 Record of users. Military and industrial users shall inform Defense Electronics Supply Center when a system application requires configuration control and the applicable SMD. DESC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronics devices (FSC 5962) should contact DESC-ECS, telephone (513) 296-6022.

6.5 Comments. Comments on this drawing should be directed to DESC-ECS, Dayton, OH 45444, or telephone (513) 296-5375.

6.6 Approved sources of supply. Approved sources of supply are listed in MIL-BUL-103. The vendors listed in MIL-BUL-103 have agreed to this drawing and a certificate of compliance (see 3.6 herein) has been submitted to and accepted by DESC-ECS.

STANDARDIZED MILITARY DRAWING SOURCE APPROVAL BULLETIN

DATE:

Approved sources of supply for SMD 81016 are listed below for immediate acquisition only and shall be added to MIL-BUL-103 during the next revision. MIL-BUL-103 will be revised to include the addition or deletion of sources. The vendors listed below have agreed to this drawing and a certificate of compliance has been submitted to and accepted by DESC-ECS. This bulletin is superseded by the next dated revision of MIL-BUL-103.

Standardized military drawing PIN	Vendor CAGE number	Vendor similar PIN 1/
8101601EX	27014	MM4629BJ/883
8101601FX	2/	CD4029BMW/883
8101602EX	34371	CD4029BF/3A

1/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.

2/ Inactive for new design. Not available from an approved source.

Vendor CAGE number	Vendor name and address
27014	National Semiconductor 2900 Semiconductor Drive P.O. Box 58090 Santa Clara, CA 95052-8090 Point of contact: 333 Western Avenue South Portland, ME 04106
34371	Harris Semiconductor 2401 Palm Bay Road P.O. Box 883 Melbourne, FL 32901